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COMPLAINTS OF ASTHENOPIA SYMPTOMS IN-OFFICE EMPLOYEES

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ABSTRAK

Masalah kesehatan mata yang dapat dialami oleh karyawan adalah asthenopia. Tujuan penelitian ini adalah untuk menjawab keluhan gejala asfenopia pada karyawan salah satu kantor di kota Tasikmalaya tahun 2020. Penelitian ini menggunakan metode penelitian deskriptif kuantitatif dengan desain cross sectional. Dalam penelitian ini alat yang digunakan untuk mengumpulkan data adalah kuesioner. Hasil penelitian menemukan bahwa gejala asthenopia yang paling banyak dirasakan oleh karyawan salah satu kantor di Kota Tasikmalaya adalah penglihatan yang teduh saat melihat objek, silau saat bekerja di depan komputer, sulit fokus saat bekerja di depan komputer, dan nyeri bahu saat bekerja di depan komputer. bekerja di komputer. 28 orang (70%) dari 40 karyawan mengalami keluhan tersebut demikian.
Kata kunci*: Masalah kesehatan mata, Asthenopia, Gejala Asthenopia*

ABSTRACT

An Eyes health problem that can be experienced by employees is asthenopia. The purpose of this study is to address complaints of Asthenopia symptoms in the employees of one of the offices in Tasikmalaya city in 2020. This research uses a descriptive quantitative research method, a cross-sectional design. In this study, to collect data, the tool used was a questionnaire. Research results found that the most asthenopia symptoms felt by employees of one of the offices in the City of Tasikmalaya were shaded vision when looking at objects, glare when working at a computer, difficulty focusing while working at the computer, and shoulder pain when working at the computer. 28 people (70%) out of 40 employees felt this way.
Keywords: Eye health problem, Asthenopia, Asthenopia's symptoms

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INTRODUCTION

Health has two meanings in Indonesian, namely "healthy" or "health" describes the condition or condition of the subject, for example, a healthy child, a healthy person, a healthy mother, and so on. Health describes the nature of the subject, for example, human health, animal health, public health, individual health, and so on. Healthy in the sense or condition has different limitations - in general, healthy is established in the condition of a person who is not sick, has no complaints, can carry out daily activities, and so on. Health in health law no. 23 of 1992 is "a perfect condition both physically, mentally, and socially and not only free from diseases and disabilities, as well as economically and socially productive. (Notoatmodjo:2010)

The emergence of a high risk of occupational hazards, limited resources in changing the work environment and determining adequate occupational health services, low awareness of occupational health risk factors, non-ergonomic working conditions, heavy physical work and long amounts of work, distribution of diverse work structures and lack of management supervision and prevention of occupational hazards, family members are frequently exposed to occupational hazards, protection issues are not properly resolved lack of health care, security, social (health insurance) and welfare facilities. (Nana Kudrawati: 2010)

The eye is one of the important senses for humans, through the human eye it absorbs visual information that is used to carry out various activities. Vision disturbances occur a lot, ranging from minor disturbances to serious disorders that can lead to blindness. Efforts to prevent and overcome visual disturbances and blindness need attention. WHO seeks to address the problem of blindness and visual impairment, with the Vision 2020 program recommended for adaptation by member countries. Vision 2020 is a global initiative to treat blindness and visual impairment worldwide. Asthenopia is ocular fatigue or tension in the visual organs where there are eye irritation and headaches due to intensive eye use. Visual fatigue describes all the symptoms that occur after excessive stress on each eye function, including tension in the ciliary muscles which accommodate when viewing very small objects at very close distances. (Nana Kudrawati:2010)

Result of research about asthenopia that had been done by Husnun in 2010 said that the duration of computer use per day was not significantly associated with the prevalence of asthenopia (p=0.700). There was a high prevalence of asthenopia among computer science students, mostly caused by refractive asthenopia . (Husnun: 2010)

Shoaib Arshad's research said that prevalence of asthenopia was found to be quite high in computer operators, especially in those who started its use at an early age. Individual as well as work-related factors were found to be associated with asthenopia. Among the 150 participants studied, the overall prevalence of asthenopia (at least 1 symptom present) is 87.3%. The prevalence of various asthenopic symptoms varied from 85.3% (eye fatigue) to 18.7% (blurring of vision). With educational intervention, significant change was observed in symptoms and relief measures. (Shoaib Arshad:2019)

Research about evaluation of the factor which contribute to the ocular complaints in computer user which has been done by Smita agarWal (2013) said that Among the 150 subjects studied major ocular com- plaint reported in descending order were eyestrain. (53%). Oc- currence of eye strain, (53.8%), itching (47.6%) and burning (66.7%) in subjects using computer for more than 6 hours. dis- tance from computer screen with respect to eyes, use of anti- glare screen, taking frequent breaks, use of LCD monitor and adjustment of brightness of monitor screen bear a significant association with these ocular complaints in computer users. Eye strain is the most common ocular com- plaints among computer users working for more than 6 hours a day. We also found that maintaining ideal distance from screen, keeping level of eyes above the top of screen, taking frequent breaks, using LCD monitors and using antiglare screen and ad- justing brightness levels according to workplace reduced these ocular complaints to a significant level.

The description above is the background for the author to examine complaints of asthenopia symptoms in-office employees in one of government offices at Tasikmalaya City in 2020.

LITERATURE REVIEW

Asthenopia is ocular fatigue or tension in the visual organs where there are eye irritation and headaches due to intensive eye use. Visual fatigue describes all the symptoms that occur after excessive stress on each eye function, including tension in the ciliary muscles which accommodate when viewing very small objects at very close distances.(Nana Kudarawati:2010)

The main cause of asthenopia is thought to be fatigue of the ciliary and extra ocular muscles due to the prolonged accommodation and vergence required by near vision work. Another causative factor that has been implicated in asthenopia is dryness of the eyes resulting from an

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increased exposed surface area of the cornea when focusing straight ahead (rather than down at written text) and a decreased blink rate due to mental concentration. Etiologically, it is classified as muscular and refractive asthenopia. Muscular asthenopia caused by heterophoria, intermittent heterotropia, and convergence insufficiency (CI). Refractive asthenopia is due to ammetropia, presbyopia, accommodative insufficiency (AI), and a combination of accommodative and convergence insufficiency. (Husnun Amalia:2010)

Prevalence of asthenopia in adult is a major work-related complaint. The increasing use of computers (desktops, tablets and laptops) and other electronic equipment (smartphones, e-book readers, video games) has multiplied the frequency of this complaint and changed its context significantly. The condition of a person experiencing asthenopia with symptoms like tired eyes, blurred or double vision as a result of the use of these electronic resources is generally referred to as “computer vision syndrome” (CVS), “video display units syndrome” (VDU), or “video display terminals syndrome” (VDT).(Manuel: 2015)

Some of the symptoms of Asthenopia include ocular symptoms, namely around the eyes feeling sore, hot, tired quickly, red eyes and dry terrace as well as visual symptoms, which are interference with focusing the image on the retina. The eyes become sensitive to light. This fatigue will cause double or blurred vision and decreased ability to see colors. Other common symptoms that are often complained of due to eye fatigue: headache, neck tension, back pain, and pain in the waist. (Hasan Hasemi: 2019)

The other articles said that the adverse health effects on eyes include asthenopic symptoms such as eyestrain, tired eyes, irritation, redness, blurred vision and double vision. The symptoms of asthenopia are usually transient and relievable; the condition can cause significant, frequent, discomfort for computer users and may lead to substantial. (Sohaib: 2019)

Asthenopia has become a significant public health problem.The change of lifestyle and the spread of personal computers, increasing rates of such complaints have been reported in various industries. These symptoms can be severe enough to limit personal activities and further result in potentially speeding up the development of age-related eye diseases. Therefore, identifying risk factors of asthenopia is of great importance to improve visual function and decrease the risk of visual fatigue. (Cheng-Cheng Han: 2013)

A person experiences Asthenopia as the main complaint due to work. The increasing use of computers such as tablets and laptops and other electronic equipment (smartphones, e-book readers, video games) has resulted in this complaint being experienced by everyone. A person who experiences asthenopia will experience symptoms such as tired eyes, blurred or double vision due to the use of this electronic device, commonly referred to as "computer vision syndrome" (CVS). (Manuel:2015)

METHODOLOGY

This research is a descriptive study with one variable, namely asthenopia complaints experienced by employees of a government office in the City of Tasikmalaya. Descriptive research aims to systematically and accurately describe facts and characteristics about a population or a particular field.(Sugiyono:2015)

The analysis used is percentage analysis. The research method used is a survey with written test techniques with an objective test model in the form of selected questions as a data collection tool, the results of which are findings of asthenopia complaints experienced by respondents in the answer categories that have been determined in the answer choices. This study is to describe the most common asthenopia complaints experienced by employees.

The research was conducted in one of the government offices in Tasikmalaya City. The research was conducted in March-April 2020.The population is a generalization area consisting of objects or subjects that have certain qualities and characteristics that the researcher determines to study and then draws conclusions. In this study, the population was involved as the research sample, or this study used a total sampling technique..The entire population is involved as research subjects. 40 people as samples are computer user workers

Instrument testing is intended to obtain instruments that are truly valid (valid) and reliable (reliable), which will be used in extracting information about asthenopia complaints that are mostly experienced by employees of one of the government offices in Tasikmalaya City. The validity test is carried out through the construct validity testing technique.

To test the validity of the construct, expert judgment can be used. In this case, after the instrument has been constructed on the aspects to be measured based on a certain theory, then the expert is consulted and asks for his opinion about the instruments that have been compiled. Perhaps the experts will give an opinion: the instrument can be used without repair, there is repair, and completely overhauled.

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In this study, the testing phase of construct validity (construct validity), by listening to the opinion of experts (judgment experts), namely Darmono, AMd.RO, SKM., MA (Optic Refractionist at Polycore Lenses Karawang and Lecturer at Leprindo Jakarta Academic of Optometry). construct validity, that the instrument consisting of 30 questions, has received improvements regarding the grammar of each question.

The questionnaire is a data collection technique in this study. Questionnaires containing written statements were given to respondents to be answered. In this study, the questionnaire was in the form of a question sheet with a choice of 30 questions. The data needed in this study is a perceived asthenopia complaint. The stages of data collection are as follows:

1. Before the questionnaire was given, the researcher explained to the respondents about asthenopia.
2. After everyone knows about asthenopia, the respondents are given a questionnaire to fill out
3. Respondents fill out a questionnaire.
4. The questionnaire that has been filled in is then returned questions or collected to obtain data about the complaints of asthenopia experienced.

Analysis of the data used in this study using quantitative descriptive analysis techniques with percentages. Descriptive statistics are statistics that are used to analyze data by describing or describing the data that has been collected as it is without intending to make general conclusions or generalizations.

The contents of the questionnaire given to respondents contained questions about complaints of asthenopia symptoms that were experienced, which included ocular symptoms, visual symptoms, and general symptoms.

These are the description of the identification of symptom complaints contained in the questionnaire of this study. The respondent not only ask about complaints of vision and ocular symptom but also ask ablout general sypmtomps that experienced. Aocular and vision sypmptoms are blurred vision, shaded vision, dificult to focus in vision, often have red eyes after doing work in front of the computer, , pain or throbbing feeling around the eyes, glare when working at the computer, heavy eyelids while working at a computer, eyes often dry after doing work at the computer, itchy eyes.

The general symptoms are headache while working at the computer, stiff in the neck while working at the computer, feeling the pain after working at the computer, having trouble focusing when working at a computer, eyes strained when working at the computer, shoulder pain when working at a computer.

RESULT AND DISCUSSION

Research result on the frequency distribution complaints of asthenopia symptoms experienced by employees of one of the offices in the City of Tasikmalaya can be seen in the table below.

Table 1 Distribution of Complaints Frequency of Asthenopia Symptoms in Employees of One Office in Tasikmalaya City 2020

No	Complain	Frequency	Precentage
1	Blurred vision	26	65%
2	Shaded vision	28	70%
3	Dificult to focus in vision	26	65%
4	Feeling the pain after working at the computer	13	32,5%
5	Often have red eyes after doing work in front of the computer	17	42,5%
6	Watery eyes when doing work at the computer	18	45%
7	Headache while working at the computer	19	47,5%
8	Pain or throbbing feeling around the eyes	18	45%
9	Glare when working at the computer	28	70%
10	Heavy eyelids while working at a computer	23	57,5%
11	Eyes often dry after doing work at the computer	28	70%
12	Itchy eyes	24	60%
13	Stiff in the neck while working at the computer	21	52,5%
14	Having trouble focusing when working at a computer	28	70%
15	Eyes strained when working at the computer	21	52,5%
16	Shoulder pain when working at a computer	28	70%

Table 1 shows that the ocular and visual symptoms that most respondents complain about are shaded vision when looking at objects, glare when working on the computer. The number of respondents who felt these symptoms was 28 people (70%) from 40 people. The most common that respondents complained about shulder pain when working at computer. This was felt by 28 respondents (70%).

Asthenopia or eyes fatigue can occur when the eye focuses on a close object, for a long time. This is

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because the eye muscles have to work harder to see objects that are very close. (Husnun: 2010)

Identification of symptoms of asthenopia complaints in employees of an office in Tasikmalaya City March-April 2020 was carried out by direct examination, by distributing questionnaires to employees to see the types of eye complaints experienced by employees. The most asthenopia symptoms felt by employees of 28 of the 40 employees of one of the offices in the City of Tasikmalaya who were respondents were shaded vision when looking at objects, glare when working at a computer, difficulty focusing on working at the computer, and shoulder pain. or shoulder when working at the computer. Ergonomic posture and workplace play an important role in the development of neck and shoulder symptoms related to computer use.

The results of this study are in line with the results of research which states that asthenopia complaints tend to increase during periods of intensive work without rest. Subjective complaints of eye strain or visual fatigue in this situation are related to work intensity, whereas psychological self-assessment. Tensions are influenced by perceptions of success in the workplace related to motivational aspects. (Masako: 2015).

Other studies have shown that asthenopia is a common problem for computer users and is largely due to insufficient accommodation. (Husnun: 2010) Asthenopia occurs due to the lack of efficiency associated with using computers. (Manuel: 2015)

Another study stated that of the 150 participants studied, the overall prevalence of asthenopia (at least 1 symptom) was 87.3%. The prevalence of asthenopic symptoms varied with 85.3% experiencing eye fatigue and 18.7% experiencing blurred vision. The other research result show that 57 % of respondents complained asthenopia. Multivariate analysis showed a significant association between computer use and asthenopia (OR 1.21, 95% CI: 1.09 to 1.35).[7] One other research said that eyestrain, itching and burning were the common ocular complaints among the computer users who worked for more than 6 hours a day. (Smita:2013)

A literature review research by Manuel (2015) said that Asthenopia occurs at a significant rate and represents a significant cause of health problems and lack of efficiency associated with work in adults exposed to daily work with computers. Such repercussions and the increasing use of these resources may represent raises in prevalence rates and their consequences. While more consistent population studies are not available, this systematic review can be used to help public health policies.

The results of these studies indicate that the incidence of asthenopia is associated with prolonged use of computers, and the symptoms experienced by all respondents vary widely.

Computer visibility is an important risk factor for eye complaints. The closer the monitor is to the eye, the harder the eye will have to work to accommodate it. Close proximity causes excess accommodation, leading to overwork of the ciliary muscles of the eye, leading to CVS symptoms such as eye fatigue and headaches. Working with a monitor allows the user to concentrate on the monitor screen, thereby reducing blinking speed and increasing eye exposure to free air, resulting in redness, fatigue and eye fatigue.

Blinding light and reflecting on a computer screen can cause eye strain. High lighting conditions and sensitivity to glare caused by computer use have been shown to increase reading time and reduce attention on assignments.

CONCLUSION

Our study conclude that the majority of complaints of asthenopia symptoms in 40 employees of one of the offices in the city of Tasikmalaya in March-April 2020 include shaded vision when looking at objects, glare when working at a computer, difficulty focusing on working at the computer, and illness of shoulder when working at the computer.

RECOMMENDATION

From the results of the research that has been done, we suggest that maintaining an ideal distance from the screen will reduce eye fatigue and headaches. Adjusting the brightness level according to the workplace is very important because it can reduce eye fatigue and watery eyes, using a flat panel LCD monitor with an anti-glare screen and frequent breaks during work also reduces these eye complaints dramatically, rrest their eyes after 2 hours at the computer using the 20-20-20 method. Every 20 minutes of distant viewing at a distance of 20 feet (6 meters) with a duration of 20 seconds.

In future studies, it is recommended to further investigate the factors that influence the occurrence of asthenopia eye fatigue such as performing refraction checks, checking visibility to a computer.

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